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Subject EPA Comments Draft EW Juvenile Salmonid QAPP



2009May1_EW Chinook QAPP Comments.doc

Doug, Susie and Matt – Attached are EPA comments on the Draft EW Juvenile Salmonid QAPP.

Hard copies will follow next week. Any questions, please give me a call.

Ravi

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EPA Comments – East Waterway Draft Juvenile Chinook QAPP (03/27/2009)

Comment No.	Page No.	Section No.	Comment
1	7	2.2	2 nd Bullet: While the tissue residue approach will characterize exposure for all routes, bullet 2 claims that this can be accomplished via dietary exposure. This does not account for the significance of water exposure for all contaminants. Please describe how to account for uptake of metals and PAHs from water.
2	7	2.2	Please change the following sentence to read: "The ERA along with a human health risk assessment and consideration of background levels of chemical concentrations will be the basis of any sediment cleanup efforts in the EW"
3	8	2.2	<p>It can not be assumed without additional justification that chum salmon are a good surrogate for Chinook. In general, Chinook will spend far more time in the estuary than chum and likely exhibit much higher tissue concentrations. Also, the behavior of wild versus hatchery Chinook is quite different. Wild Chinook are likely to spend far more time in the LDW and EW than hatchery Chinook. From the narrative in the QAPP, it seems that this effort is focused on hatchery fish when it should be targeted on effects in wild Chinook. Table 2-1 shows no difference between wild and hatchery fish; however, it doesn't say when these fish were collected. NOAA's work shows no differences between wild and hatchery for a given time of collection (e.g., early June); however fish collected several weeks later than the early June peak hatchery migration exhibit much higher concentrations. This is likely due to more time in the estuary and possibly some competitive interactions for prey in early June because there are so many fish in the system.</p> <p>The diets for these two species may be different enough to cause a disparity in the rate of toxicant uptake. Chinook will feed on higher trophic level prey, which will have substantially higher contaminant loads than lower trophic level prey.</p> <p>Please evaluate and explain whether Coho might serve as a better surrogate. NOAA analyzed 2 composites of coho collected just outside Slip 4 and found that concentrations for PCBs in stomach contents and whole body were almost identical to what was observed for Chinook. These fish were also about the same size. Please evaluate whether the occurrence and behavior of coho in this system is similar enough to Chinook to warrant further consideration.</p>
4	8	2.2	1 st Paragraph: "In the 5 mile long Lower Duwamish Waterway immediately upstream of the East Waterway, juvenile Chinook salmon residence time has been estimated to be from about 2 weeks to six months (Ruggerone and Volk 2004)." Please provide additional explanation regarding whether the researchers make a distinction between wild and hatchery residence times.
5	8	2.2	<p>Sentence in second paragraph, "Mark-recapture data reported in Weitkamp and Schadt (1982) indicate that chum residence time in the LDW is about 1 week. Whereas, in this same study, the longest Chinook residence reported was 24 days."</p> <p>Please explain whether the Chinook were hatchery raised or wild fish. Hatchery fish are typically bigger than wild fish when released. Their typical residence time on the LDW is much less, more on the order of weeks compared to months for wild Chinook.</p> <p>In addition, using chum as a surrogate is likely to underestimate the uptake in contaminants significantly. Chum spend much less residence time in the LDW and are smaller than juvenile Chinook. Chum and Chinook also feed differently (per communication with Tom Nelson). Please provide additional justification to support the argument that chum are representative surrogates for Chinook.</p>
6	9	2.2	Sentence in first paragraph. "Because they have similar habitat use and prey preferences, juvenile chum salmon are a reasonable surrogate species for juvenile Chinook salmon, if an insufficient number of juvenile Chinook salmon are collected but a sufficient number of juvenile chum salmon are collected to meet the sampling objectives." The discussion in section 2.2 does not adequately support this conclusion. Please explain whether other types of salmonids were evaluated.
7	10	2.3.1	Please discuss whether sampling later than June was considered and why June was identified as the optimal time for tissue collection. The peak migration for wild fish is likely not the same as that for hatchery fish. NOAA found that wild fish will reside in the LDW well into the summer and exhibit high concentrations of PCBs.

EPA Comments – East Waterway Draft Juvenile Chinook QAPP (03/27/2009)

Comment No.	Page No.	Section No.	Comment
8	10	2.3.2	<p>It appears that because the fish stomach contents samples will be removed from the same fish used for whole-body tissue analysis that the latter would not strictly be "whole" body, but rather the whole body minus stomach contents. Please explain where this approach has been used previously (i.e., in the previously approved fish and shellfish QAPP or perhaps for the Lower Duwamish project). If such a practice has not been previously justified, the "whole"-body samples may not truly be representative of tissue concentrations in whole organisms. It should also be mentioned in the QAPP that this issue will be discussed in an uncertainty section of the data report.</p> <p>This issue is important not only from an ecological point of view (i.e., whole fish are consumed by other ecological receptors as whole organisms including gut contents), but also because the ecological effects literature against which these measurements will be compared in the risk characterization usually use whole-body tissue analysis. Please provide justification for the proposed approach.</p>
9	12	Table 3-1	The list of PAHs is severely limited. For some composite samples of stomach contents for juvenile Chinook collected in the LDW, alkylated PAHs were found to comprise 50 – 80% of the total PAHs. This list in this table does not include a single alkylated PAH. Please add alkylated PAHs to the COI list, or provide an explanation to support the decision against analyzing for these COIs.
10	15	3.1.2	Please explain why Slip 27 is preferred for sampling over Slip 36.
11	16	3.1.2	Getting 18 grams of stomach contents is likely to be difficult. Please discuss whether lower amounts for each sample may be possible. Because only PAHs and metals are being analyzed, 2 - 3 grams should provide a decent method detection limit (MDL) for each. Extremely low MDLs for these analyses may not be needed so accepting a higher detection limit (e.g. 5 or 10 ng/g) will be sufficient for these analytes. By accepting the lower MDL, additional analyses will be possible.
12	16	3.1.2	See to comment 8.
13	17	3.1.2	"The exact sampling date for the June sampling event will be the first day in June after the NMFS permit is awarded that is 2-days after a juvenile Chinook salmon hatchery release from the Soos Creek hatchery." Please explain whether the goal of this sampling event is to collect the recently released hatchery fish. It may be more appropriate to modify the approach to maximize capture of wild juvenile Chinook salmonids. For example, in late June more hatchery fish will have transited through the system and more wild Chinook may be available. Please provide further discussion of this issue.